

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA - SEMESTER– I EXAMINATION – SUMMER 2018****Subject Code: 610001****Date: 19/05/2018****Subject Name: Fundamentals of Programming****Time:02:30 P.M. to 05:00 P.M.****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Answer the following :
- i. Explain term constant, symbolic constant and literal. **03**
 - ii. Differentiate between algorithm and pseudo code. **04**
- (b)** Explain various symbols of flow chart and draw a flowchart to find maximum of three numbers. **07**
- Q.2 (a)** Differentiate between following:-
- i. Constant pointer and pointer to constant **03**
 - ii. `int *p[2]` and `int (*p)[2]` **04**
- (b)** What is an array? Write a program to sort n element using user define function. **07**
- OR**
- (b)** Write a program to multiply two matrices using user define function. **07**
- Q.3 (a)** What is recursion? Write a recursive function to convert any decimal number to binary number. **07**
- (b)** Explain various storage class in detail. **07**
- OR**
- Q.3 (a)** Explain malloc, calloc, realloc and free function in detail. **07**
- (b)** Differentiate between macro and function with suitable example. **07**
- Q.4 (a)** Differentiate between enum, structure and union with suitable example. **07**
- (b)** Write a program to perform following operations on singly linked list
- i. Add node at end of list **03**
 - ii. Delete node **03**
 - iii. Search node **01**
- OR**
- Q.4 (a)** Differentiate between array name and pointer. Write a program sort string array using pointer. **07**
- (b)** Write short note on command line arguments and its usage and also write a program to make a DOS command “copy con” which shows the contents of given file. **07**
- Q.5 (a)** Differentiate between
- i. `ftell()` and `fseek()` functions **02**
 - ii. void pointer and NULL pointer **02**
 - iii. binary file and text file **03**
- (b)** Explain `#ifdef` , `#undef` and `#ifndef` preprocessor with example **07**

OR

Q.5 (a) Write down the output of following code snippet

(i) void main()

```
{  
  int a[]={ 1,2,3,4,5};  
  int *x=a,*y=a[4];  
  printf(“%d”,y-x);  
}
```

03

(ii) #define swap(a,b) t=a;a=b;b=t;

```
void main()  
{  
  static int a=1,b=2,t;  
  if(t)  
    swap(a,b);  
  printf(“%d , %d , %d“,a,t,b);  
}
```

04

(b) Write short note on following:

- i. bitwise operator
- ii. #pragma
- iii. bitfield

03

02

02